

Claims

- [1] An in-wall type multi-functional television set embedded in a wall, comprising:
a main body including an accommodating part provided at a front side of the main body, an input part with a plurality of input keys provided at a side of the main body, a television signal receiving circuit for receiving and outputting a broadcast television signal, speakers for outputting an audio signal received from the television signal receiving circuit, and a controller for controlling the in-wall type multi-functional television set;
a monitor, accommodated in and withdrawn from the accommodating part of the main body, for displaying the video signal received from the television signal receiving circuit; and
a connecting part having an end portion connected to the accommodating part and other end portion connected to the monitor.
- [2] The in-wall type multi-functional television set as set forth in claim 1, wherein the connecting part comprises:
a plurality of foldable supports;
the end portion is fixed at a predetermined position of the accommodating part; and
the other end portion is hinged to be rotated right and left to a rotating device provided at a rear side of the monitor.
- [3] The in-wall type multi-functional television set as set forth in claim 1 or 2, wherein the monitor further comprises inserting protrusions integrally formed at a rear side of the monitor, and
the main body further comprises a bracket formed with protrusion holes, in which the inserting protrusions are inserted and fixed, and integrally formed at both sides of the accommodating part of the main body.
- [4] The in-wall type multi-functional television set as set forth in claim 1 or 2, further comprising grip portions formed at both sides of the monitor.
- [5] The in-wall type multi-functional television set as set forth in claim 1, wherein the television signal receiving circuit comprises:
a television tuner for separating and outputting broadcast data received through an antenna into video data and audio data;
a video processor for demodulating the video data outputted from the television tuner and outputting the demodulated video data; and
an audio output part for demodulating the audio data outputted from the television tuner into the audio signal and for outputting the demodulated audio signal.

- [6] The in-wall type multi-functional television set as set forth in claim 5, wherein the main body comprises:
a main body microphone for converting a user's voice into an electric voice signal and outputting the electric voice signal;
an interphone processor for outputting a video signal and an audio signal of a visitor received from a camera and an interphone microphone provided in an interphone, and outputting the electric audio signal received from the main body microphone to the interphone;
a video selector for outputting one of video signals inputted from the television tuner and the interphone processor to the video processor; and
an audio selector for outputting one of audio signals inputted from the television tuner and the interphone processor to the audio output part.
- [7] The in-wall type multi-functional television set as set forth in claim 6, wherein the main body further comprises a telephone circuit for outputting a ring signal and an audio signal received through a telephone line to the audio selector and transmitting an audio signal outputted from the main body microphone through the telephone line.
- [8] The in-wall type multi-functional television set as set forth in claim 1, wherein the main body further comprises an odor-removing device,
the odor-removing device comprising:
a basidiomycota mycelium bag; and
a heating unit in which an electric heating device is installed and made of one of a plastic, a ceramic, and glass.
- [9] The in-wall type multi-functional television set as set forth in claim 1, wherein the main body further comprises a home automation interface, electrically connected to a computer for controlling home automation installed in a home, for receiving and transmitting manipulation commands from and to home appliances in the home.
- [10] An in-wall type multi-functional television set embedded in a wall, comprising:
a main body including:
an accommodating part formed in the front side of the main body;
a television signal receiving circuit for receiving and outputting a television signal;
a housing including a controller for controlling all devices in the in-wall type multi-functional television set; and
a case including an input part provided with a plurality of input buttons and speakers for outputting an audio signal;
a monitor accommodated in and withdrawn from the accommodating part, and

including a display for displaying a video signal outputted from the television signal receiving circuit, and a video processing circuit for converting the video signal outputted from the television signal receiving circuit to display data suitable to be displayed by the display and outputting the converted video signal; cables for transmitting the television signal outputted from the television signal receiving circuit to the video processing circuit; and a connecting part including:

a first rotating part fixed to a side of the accommodating part, and having a first hinge shaft, a first hinge base integrally formed with the first hinge shaft, and a hole formed therein;

a second rotating part fixed to the rear side of the monitor, and having a second hinge shaft, a second hinge base integrally formed with the second hinge shaft, and a hollow cable passage formed therein through which the cables pass, and a support having an end hinged to the first rotating part and the other end hinged to the second rotating part.

[11] The in-wall type multi-functional television set as set forth in claim 10, further comprising:

a first waterproofing packing inserted into the place where the first rotating part is fixed in the accommodating part, and formed with a slit through which the cables pass; and

a second waterproofing packing inserted into the place where the second rotating part is fixed to the rear side of the monitor, and formed with a slit through which the cables pass.

[12] The in-wall type multi-functional television set as set forth in claim 11, wherein the case further comprises:

a guide plate formed integrally with the case, having a wide upper side and a narrow lower side, and guiding water, moisture, or humidity entered into the case through the input part and the speakers; and

a drain hole for draining the water, the moisture, or the humidity, gathered by the guide plate provided at the bottom of the case, out of the case.

[13] The in-wall type multi-functional television set as set forth in claim 12, wherein the monitor further comprises a locking protrusion formed at the rear right and left sides of the monitor and integrally formed with the monitor, and the main body further comprises a locking recess, formed at the place of the accommodating part corresponding to the place where the locking protrusion is formed, into which the locking protrusion is inserted.

[14] The in-wall type multi-functional television set as set forth in claim 12, wherein the monitor further comprises a waterproof-treated permanent magnet attached to

- [15] the rear side of the monitor, and the main body further comprises a metal sheet provided in the accommodating part and attached to the magnet.
- [16] The in-wall type multi-functional television set as set forth in claim 13 or 14, wherein the monitor further comprises grips formed at the sides of the monitor. The in-wall type multi-functional television set as set forth in claim 10, wherein the television signal receiving circuit comprises:
a television tuner for separating the television broadcasting signal received through an antenna into video data and audio data and outputting the same; a video processor for demodulating the video data outputted from the television tuner and outputting the demodulated video data to the video processing circuit through the cables; and
an audio output part for demodulating the audio data outputted from the television tuner and outputting the demodulated audio data to the speakers.
- [17] The in-wall type multi-functional television set as set forth in claim 16, wherein the main body further comprises:
a main body microphone for converting a user's voice into an electric voice signal and outputting the electric voice signal;
an interphone processor for outputting a video signal and an audio signal of a visitor received from a camera and an interphone microphone provided in an interphone, and outputting the electric audio signal received from the main body microphone to the interphone;
a video selector for outputting one of video signals inputted from the television tuner and the interphone processor to the video processor; and
an audio selector for outputting one of audio signals inputted from the television tuner and the interphone processor to the audio output part.
- [18] The in-wall type multi-functional television set as set forth in claim 17, wherein the main body further comprises a telephone circuit for outputting a ring signal and an audio signal received through a telephone line to the audio selector and transmitting an audio signal outputted from the main body microphone through the telephone line.
- [19] The in-wall type multi-functional television set as set forth in claim 18, wherein the main body further comprises an odor-removing device, the odor-removing device comprising:
a basidiomycota mycelium bag; and
a heating unit in which an electric heating device is installed and made of one of plastic, ceramic, or glass.
- [20] The in-wall type multi-functional television set as set forth in claim 19, wherein the main body further comprises a home automation interface, electrically

connected to a computer for controlling home automation installed in a home, for receiving and transmitting manipulation commands from and to home appliances.